

Michael Lutz  
Praxair, Inc.  
P. O. Box 44  
Tonawanda, New York 14151

Re: Registered Construction and Operation Status,  
183-11911-00032

Dear Mr. Lutz:

The application from Praxair, Inc., received on February 21, 2000 has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.1, it has been determined that the proposed new plant that will manufacture oxygen, nitrogen and argon using cryogenic temperatures (below minus 300 degrees °F) and fractionally distilled to separate the air into its elemental constituents at a rate of 400 tons per day is classified as registered. The proposed plant will consists of the following facilities and will be located at 2601 County Road 700 East Columbia City, Indiana:

- (a) One (1) Vaporizer Heater, identified as A1 with a total firing rate of 18 million British Thermal Units (mmBtu/hr), which will heat the water that is inside the Vaporizer Vessel; and
- (b) One (1) natural gas-fired Emergency Generator, identified as A2 with an output rate of 67 horsepower. This generator is used to produce a limited amount of back-up electrical power in the event of a public utility outage.

The following conditions shall be applicable:

- (1) Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following:
  - (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
  - (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.

This registration is the first air approval issued to this source. Praxair, Inc. may operate according to 326 IAC 2-5.1.

An authorized individual shall provide an annual notice to the Office of Air Management that the source is in operation and in compliance with this registration pursuant to 326 IAC 2-5.1-2(f)(3). The annual notice shall be submitted to:

Compliance Data Section  
Office of Air Management  
100 North Senate Avenue  
P.O. Box 6015  
Indianapolis, IN 46206-6015

no later than March 1 of each year, with the annual notice being submitted in the format attached.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Management (OAM) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,

Paul Dubenetzky, Chief  
Permits Branch  
Office of Air Management

APD

cc: File - Whitley County  
Whitley County Health Department  
Air Compliance - Ryan Hillman  
Permit Tracking - Janet Mobley  
Technical Support and Modeling - Michele Boner  
Compliance Data Section - Karen Nowak

<b>Registration Annual Notification</b>
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This form should be used to comply with the notification requirements under 326 IAC 2-5.1-2(f)(3)

<b>Company Name:</b>	<b>Praxair, Inc.</b>
<b>Address:</b>	<b>2601 County Road 700 East</b>
<b>City:</b>	<b>Columbia City</b>
<b>Authorized individual:</b>	<b>Michael Lutz</b>
<b>Phone #:</b>	<b>(716) 879-2000</b>
<b>Registration #:</b>	<b>183-11911-00032</b>

I hereby certify that **Praxair, Inc.** is still in operation and is in compliance with the requirements of Registration **183-11911-00032**.

<b>Name (typed):</b>
<b>Title:</b>
<b>Signature:</b>
<b>Date:</b>

## Indiana Department of Environmental Management Office of Air Management

### Technical Support Document (TSD) for New Registered Emission Units

#### Source Background and Description

Source Name:	Praxair, Inc.
Source Location:	2601 County Road 700 East, Columbia City, Indiana 46725
County:	Whitley
Registration No.:	183-11911-00032
SIC Code:	2813
Permit Reviewer:	Aida De Guzman

The Office of Air Management (OAM) has reviewed an application from Praxair, Inc. relating to the proposed construction and operation of a plant that will produce oxygen, nitrogen, and argon from air using the cryogenic temperatures (below minus 300 degrees °F) and fractionally distilled to separate the air into its elemental constituents. This plant will be capable of producing oxygen, nitrogen and argon from the air at a rate of 400 tons per day. This plant will include the following equipment:

- (a) One (1) Vaporizer Heater, identified as A1 with a total firing rate of 18 million British Thermal Units (mmBtu/hr), which will heat the water that is inside the Vaporizer Vessel; and
- (b) One (1) natural gas-fired Emergency Generator, identified as A2 with an output rate of 67 horsepower. This generator is used to produce a limited amount of back-up electrical power in the event of a public utility outage.

#### Source Definition

Praxair, Inc. is a proposed plant that will provide oxygen and argon to Steel Dynamics, Inc. (SDI). Liquid argon will be trucked off-site for general distribution to other customers in the Chicago area. Praxair Inc. and SDI are two (2) different plants, owned by different people or companies, and have different SIC codes. SDI is located at 4500 County Road 700 East, Columbia City, Indiana 46725, and Praxair will be located at 2601 County Road 700 East, Columbia City 46725, which is within the site of SDI.

"IDEM, Legal Section has determined based on EPA Guidance that nothing suggests that there is any common ownership or control by SDI over Praxair, even taking the common control test to byproduct facilities or any facility for the matter, the byproduct facility contracts show a little bit more "control" through contract than this one does (Praxair and SDI situation) (not to mention that Praxair is actually providing a product to SDI, rather than taking byproduct). Therefore, the Praxair plant is a new and separate source from SDI".

### Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
A1	Vaporizer heater	14	0.67	2,900	400
A2	Emergency generator	8	0.21	1,200	350

### Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Information, unless otherwise stated, used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on February 21, 2000.

### Emissions Calculations

- (1) Vaporizer Heater Natural Gas Combustion Emission: See Page 1 of 1 TSD Appendix A for detailed emission calculations
- (2) Emergency Generator Natural Gas Combustion:

67 hp Emergency Generator					
Pollutant	NOx	VOC	CO	PM10	SO2
Emission Factor, Ef (lb/hp-hr) Using AP-42, Table 3.2-1, SCC2-02-002-54	0.026	0.011	0.00353	-	-
Emissions (tons/year)	7.60	3.2	1.04	-	-

Methodology:

Emission = engine capacity, hp \* Ef lb/hp-hr \* ton/2000 lb \* 8760 hr/yr

- (3) Oxygen, Nitrogen and Argon Production Emission:  
There is no emission from this production process, because oxygen, nitrogen and argon are produced using the cryogenic air separation process, which is a thermodynamic process that is physical, not chemical.

	SUMMARY OF EMISSIONS (TONS/YEAR)					
POLLUTANT	PM	PM10	SO2	VOC	NOX	CO
Vaporizer Heater	0.1	0.6	0.0	0.4	7.9	6.6
Emergency Generator	0.0	0.0	0.0	3.2	7.6	1.04
Oxygen, Nitrogen and Argon Production	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	0.1	0.6	0.0	3.6	15.5	7.64

### Potential To Emit Before Controls

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA.”

Pollutant	Potential To Emit (tons/year)
Particulate Matter (PM)	0.1
Particulate Matter (PM10)	0.6
Sulfur Dioxide (SO <sub>2</sub> )	0.0
Volatile Organic Compounds (VOC)	3.6
Carbon Monoxide (CO)	7.64
Nitrogen Oxides (NO <sub>x</sub> )	15.5
Single Hazardous Air Pollutant (HAP)	0.0
Combination of HAPs	0.0

### Justification for the Level of Approval

The new proposed Praxair plant, will be issued a Registration, pursuant to 326 IAC 2-5.1, because the Oxides of Nitrogen (NO<sub>x</sub>) is emitted at levels greater than 10 tons per year, but less than 25 tons per year.

### County Attainment Status

The source is located in Whitley County.

Pollutant	Status (attainment, maintenance attainment, or unclassifiable; severe, moderate, or marginal nonattainment)
PM-10	attainment
SO <sub>2</sub>	attainment
NO <sub>2</sub>	attainment
Ozone	attainment
Lead	not determined

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO<sub>x</sub>) are precursors for the formation of ozone. Therefore, VOC and NO<sub>x</sub> emissions are considered when evaluating the rule applicability relating to the ozone standards. Whitley County has been designated as attainment or unclassifiable for ozone.
- (b) Whitley County has been classified as attainment or unclassifiable for all the other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD), and 40 CFR 52.21.

#### Source Status

New Source PSD Definition (after compliance with applicable rules, based on 8,760 hours of operation per year at rated capacity):

Pollutant	Potential To Emit (tons/year)
Particulate Matter (PM)	0.1
Particulate Matter (PM10)	0.6
Sulfur Dioxide (SO <sub>2</sub> )	0.0
Volatile Organic Compounds (VOC)	3.6
Carbon Monoxide (CO)	7.64
Nitrogen Oxides (NO <sub>x</sub> )	15.5
Single Hazardous Air Pollutant (HAP)	0.0
Combination of HAPs	0.0

- (a) This new source is not a major stationary source because it is not one of the 28 listed source categories and does not emit more than 250 tons per year of at least one regulated attainment pollutant.

#### Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program):

This new source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,  
 (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and  
 (c) any combination of HAPs is less than 25 tons/year.

This is the first air approval issued to this source.

### Federal Rule Applicability

- (a) New Source Performance Standards (326 IAC 12) and 40 CFR Part 63 applicable to this facility.
- (1) 40 CFR Part 60.330- Standards of Performance for Stationary Gas Turbines. This NSPS applies to all stationary gas turbines with a heat input at peak load equal to or greater than 10.7 gigajoules per hour (10 mmBtu/hr), based on the lower heating value of the fuel fired, which commences construction, modification, or reconstruction after October 3, 1977.
- This NSPS does not apply to generators. Therefore, the proposed 67 horsepower (Hp) Emergency Generator, identified as A2 in this application is not subject to this NSPS.
- Note: Turbine is an engine that converts kinetic energy of a moving fluid into a mechanical power.  
A generator converts the mechanical energy, which is extracted by the turbine into electrical energy.
- (2) 40 CFR Part 60.40-Standards of Performance for Small industrial-Commercial-Institutional Steam Generating Units. This NSPS applies to steam generating unit for which construction, modification or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 100 million British Thermal Units per hour (mmBtu/hr) or less, but greater than or equal to 10 mmBtu/hr.
- This NSPS does not apply to the new 18 mmBtu/hr vaporizer heater identified as A1, because it is not a steam generating unit.
- (b) National Emission Standards for Hazardous Air Pollutant (NESHAP):  
There are no NESHAPs applicable to these facilities.

### State Rule Applicability

- (1) 326 IAC 2-6 (Emission Reporting)  
This proposed Praxair plant, is **not** subject to 326 IAC 2-6 (Emission Reporting), because NOx is emitted at level less than 100 tons per year, and is not in one of the counties listed in the rule.
- (2) 326 IAC 6-2 (Particulate Emissions Limitations for Sources of Indirect Heating)  
The new 18 mmBtu/hr vaporizer heater identified as A1, and the new 67 Hp emergency generator identified as A2 are **not** subject to this rule, because they are not sources of indirect heating.
- (3) 326 IAC 8 (Volatile Organic Sources)  
There are no VOC emitted from the source's process operations (oxygen, nitrogen and argon production). Therefore, no 326 IAC 8 rule will apply.



### **Air Toxic Emissions**

Indiana presently requests applicants to provide information on emissions of the 189 hazardous air pollutants set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries.

- (a) None of these listed air toxics will be emitted from this proposed construction.

### **Conclusion**

The construction of the new plant which manufactures oxygen, nitrogen and argon will be subject to the conditions of the attached proposed **Registration 183-11911-00032**.

**Appendix A: Emissions Calculations**  
**Natural Gas Combustion Only**  
**MM BTU/HR <100**  
**Small Industrial Boiler**

Page 1 of 1 TSD App A

**Company Name** Praxair Inc.  
**Address City** 2601 County Rd., 700 East, Columbia City, IN 46725  
**Registration I** 183-11911-00032  
**Reviewer:** Aida De Guzman  
**Date:** March 10, 2000

Vaporizer heater w/ 2 gas burners  
 @ 9 mmBtu/hr each

Heat Input Capacity  
 MMBtu/hr

Potential Throughput  
 MMCF/yr

18.0

157.7

Pollutant						
Emission Factor in lb/MMCF	PM* 1.9	PM10* 7.6	SO2 0.6	NOx 100.0 **see below	VOC 5.5	CO 84.0
Potential Emission in tons/yr	0.1	0.6	0.0	7.9	0.4	6.6

\*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

\*\*Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

**Methodology**

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton  
 above  
 emission